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ABSTRACT

Field experience is a crucial stage for prospective teachers. However, evidence shows that there are only 20% of teachers in the nation who feel well prepared to integrate educational technology into classroom instruction (1999, Year 2 StaR Report). As a result, the prospective teachers may not observe classroom teachers integrating educational technology during field experiences. This presents a severe deficiency in the teacher preparation process. This project is about systemically integrating educational technology into field experience and the Teacher Preparation curriculum. Through consultation and training, cooperating teachers work with prospective teachers to implement educational technology into field experiences, while faculty members in the Teacher Preparation Programs and the Arts and Sciences Departments set role models in the methods courses and regular curriculum. Systemic growth and collaboration will sustain in the participating schools and the teacher education institution. (Author)

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# Integrating Educational Technology into Field Experiences and Teacher Education Curriculum-A Systemic Approach

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# Integrating Educational Technology into Field Experiences and Teacher Education Curriculum-A Systemic Approach

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**Abstract**

*Field experience is a crucial stage for prospective teachers. However, evidence shows that there are only twenty percent of teachers in the nation feel well prepared to integrate educational technology into classroom instruction (1999, Year 2 StaR Report). As a result, the prospective teachers may not observe classroom teachers integrating educational technology during field experiences. This presents a severe deficiency in the teacher preparation process. This project is about systemically integrating educational technology into field experience and the Teacher Preparation curriculum. Through consultation and training, cooperating teachers work with prospective teachers to implement educational technology into field experiences, while faculty members in the Teacher Preparation Program and the Arts and Sciences Departments set role models in the methods courses and regular curriculum. Systemic growth and collaboration will sustain in the participating schools and the teacher education institution.*

**Need for the Project**

Field experience and student teaching are two crucial stages for prospective teachers before they become regular classroom teachers. They take methods courses in the teacher education program that prepare them in concepts regarding how a classroom is constructed and how learning and teaching are developed in the classroom context. It is not until the field experience that the prospective teachers often realize the real work of teaching from a teacher's point of view. They observe and depend on the cooperating teachers to provide the models and to demonstrate how learning and teaching can take place effectively in the classroom. Based on CEO Forum Reports (1999, Year 2 StaR Report), only 20 percent of teachers in the nation feel well prepared to integrate educational technology into classroom instruction. This means that, when prospective teachers go into the field, the chances are that they may not observe classroom teachers integrating educational technology, depending on whether or not their cooperating teachers are among that 20 percent of teachers. Given the national awareness of how technology should be integrated as a powerful learning and instructional tool in the classroom (NCATE, ISTE Standards), this statistic reminds us that there is a severe deficiency in teacher preparation programs. No matter what kind of technology training and method courses we equip our prospective teachers with in the teacher preparation curriculum, they may or may not be able to see how educational technology is being used in real classrooms during field experience.

The Teacher Education Program at a reputable private university located in north central Ohio requires perspective teacher to take at least two courses in educational technology. The course content includes skills in using different traditional and non-traditional technology, theories about why and how educational technology should be integrated to enhance learning and instruction, and examples of integration. However, if the field experience does not ensure the perspective teacher an appropriate context, the training and knowledge the perspective teacher received from the program cannot be validated and reinforced in real classrooms.

The Teacher Education Program and the College of Education at this university are among the largest in the state of Ohio. The university sends out over 500 students for field experiences every semester and works with 23 school districts (103 school buildings) including over 350 cooperating teachers. Based on the survey delivered to these cooperating teachers who work with this university, there are only 25 percent of the teachers who feel confident in integrating technology in the regular curriculum. With these figures in mind, we wonder how many of our children in the classrooms missed out on the opportunities to use technology as a powerful learning tool and are being under-prepared for the digital era.

Another area that presents a problem is the low percentage of educational technology integration in courses that prospective teachers take from the Arts and Science Department (30%) and the Teacher Education Program (35%) at this university. Not all faculty members who teach these courses have the knowledge and skills to model the integration of technology into curriculum as inquiry and instructional tools. As a result, the prospective teachers face double jeopardy. Not only can't they see much modeling from their cooperating teachers during field experiences, neither do they see much modeling within their teacher preparation curriculum with the exception of the two educational technology courses.

To correct the deficiency of the teacher preparation process, a systemic approach is in order. This approach entails a partnership among the stakeholders including the Teacher Education Program, institutions that host the program, faculty members in the Teacher Education Program and the Arts and Science Department, public schools administrators, classroom teachers, prospective teachers, and community members. With the understanding that the partners involved in this project will have far more impact than the initial scope of this project, the next section will explain the design by which this partnership improves and eventually resolves the aforementioned problems.

**Design of the Project**

**A. Goal and Expected Outcomes**

The goal of this project is to systemically improve the field experiences of the Teacher Education Program and the degree to which cooperating public schools and the university faculty members integrate educational technology (ET) into regular curriculum. The expected outcomes include but are not limited to the following:

- Increased degree of educational technology integration in field experiences for the prospective teachers at the university.
- Increased confidence of prospective teachers in integrating educational technology in the classroom settings.
- Increased skills and knowledge of prospective teachers in integrating educational technology in the classroom settings.
- Increased degree of educational technology integration in participating public schools.
- Increased degree of educational technology integration in the Teacher Education Program and Arts and Science Department in the university.
- Increased confidence levels for participating professors in the use and integration of educational technology in the content courses.
- Increased confidence levels for participating cooperating teachers to sustain the interest and the skill of educational technology integration.
- Increased collaboration among teachers and prospective teachers in educational technology integration.
- A consortium Web site will be built for this project so that all participants can use the collective information (i.e., lesson plans, integration ideas, published student works, etc) and collaborate their efforts. This Web site will be designed in ways that can accommodate people with disabilities.
- A documentary videotape will be made to share the successful experiences and preliminary model with other universities and k-12 schools.

**B. Description of the Project Design**

This partnership will be developed in the following four stages -preparation: commitment of partners; assessment and training; adaptation; summative evaluation and diffusion. Formative evaluations will be conducted in each stage to evaluate the effectiveness of the process. A consortium Web site will be built to contain the information of this project. A videotape will be produced documenting the entire process to be used in the diffusion stage of the project.

**Stage I: Preparation-Commitment of Partners**

**Time Frame: Pre-Project Time**

In the first stage of the partnership, each partner will need to commit to the shared vision and provide the necessary resource (i.e., service, time, money, equipment, etc) to facilitate this partnership. The shared vision is to systemically improve the quality of field experience of the Teacher Education Program, the quality of teacher preparation curriculum, and the competency of classroom teachers in the area of educational technology integration, in turn to produce competent teachers and richer educational experience in the classrooms. The partners in this project include the Teacher Education Program at the university; the Educational Technology Program in the university; 6 school districts; faculty members in the Teacher Education program; faculty members in the Educational Technology program; faculty members in the Arts and Science Department who teach methods courses

to prospective teachers; cooperating classroom teachers from 6 school districts; and prospective teachers who are enrolled in the teacher education program at the university.

Examples of commitment include but are not limited to the following:

1. Participating school districts will raise 3% of the budget in the area of educational technology.
2. Participating school districts have to continue to support the existing in-service training in the area of technology integration.
3. Public schools administrators will commit to obtaining video conferencing facilities (i.e., cable TV, Polycom unit, or Satellite dish) for cooperating teachers to receive consultation at their school sites.
4. Educational technology faculty members in the Teacher Education Program will be given released time and incentives to offer training to faculty members in the Teacher Education Program and methods teachers in Arts and Science Department.
5. The university will have a video conferencing facility and video capturing and editing equipment for the Teacher Education Program since these are the areas that have not been covered in the curriculum due to the lack of facilities. In addition to necessary on-site consultation, educational technology faculty members and selected professionals will need this facility to deliver consultation to classroom teachers in different school districts.
6. Faculty members in the Teacher Education Program and faculty members in the Arts and Science Department who teach methods courses will commit to receive training or consultation in the area of educational technology integration.
7. Participating school teachers who are skilled in the area of educational technology are given incentives to coach peer teachers or to conduct in-service training
8. Although not as official members in this consortium, educational technology professionals from the Tri-County Computer Service Association (TCCSA) and Tri-River Educational Computing Association (TRECA) will be contracted to provide consultation to the cooperating teachers and prospective teachers either on-site or via video conferencing facilities regarding how to integrate educational technology during the field experience sessions.
9. Prospective teachers who have taken educational technology courses in the university will assist the cooperating teachers in needed technology skills while working with consultants to integrate educational technology into field experiences.
10. Classroom teachers who receive consultation as a result of this partnership will provide consultations to their peer teachers given limited incentives.

**Stage II: Assessment and Training**
**Time Frame: First Project Year (June,1, 2001-May 31, 2002)**

In the second stage, the focus of this project is to identify the areas where the faculty members in the Teacher Education Program and the Arts and Science faculty members who teach methods courses lack knowledge and skills, and provide training that is needed. The areas where cooperating classroom teachers need consultation from the trainers are also identified during this stage.

Based on the national standards (ISTE), the contents of training and consultation sessions for participating university faculty members, cooperating teachers, and prospective teachers would include but not be limited to the following:

- Basic concepts and skills of using computer systems
- Basic concepts and skills of using computer related peripherals, i.e., scanner, digital camera, projectors, etc)
- Using productivity tool (word processor, spreadsheet, database) effectively as teaching, learning, and management tools.

  Examples
  - Proficient use of word processor to produce document for specific purpose, such as newsletter, communication, and professional documents.
  - Power point presentation– Instructional tool (teacher), learning tool (students)
  - Spreadsheet application-inquiry project, grading sheets, etc.
  - Database-inquiry project, resource management, test bank, etc.

- Using Hypermedia tools such as Hyper Studio and KidPix as instructional and learning tools. Examples: tailored tutorial, drill and practice for specific topic & students; student created projects for specific topics under study.
- Using Internet applications for research, communication, instruction, learning, and management.

Examples:

- Advanced email communication and listserv
- Locate and utilize resource database
- Develop Web pages that include instructional element (tutorial, information), learning element (research project, collaborative learning projects), management element (class Web site, syllabus, and communication with students and parents).
- Be able to search useful Web sites and create annotated list of good software and useful sites to share with colleagues.
- Be able to provide description of criteria for selecting and evaluating educational software.
- Be able to provide a written guide and example of using Web sites and software for inquiry projects.
- Using existing assistive technology features for inclusion classrooms.
- Using video conferencing facilities to communicate and to collaborate.

A needs assessment will be conducted to identify the gap between the desired training outcomes and the current skill and knowledge of the participating university faculty members. After the needs are identified, the university faculty members need to commit to signing on for training sessions so that they can model the use of technology in the context of their subject matters.

The Educational technology faculty members in the university and selected professionals will provide training to the participating faculty members either on sites or via video conferencing. Similar needs assessment will be conducted for participating cooperating teachers. With the pre-existing in-service training that individual participating school offers, the trainers will consult and scaffold cooperating teachers and prospective teachers to integrate educational technology into field experience sessions. The classroom teachers will be informed of the schedule when the skill sessions will be provided for university faculty members. The cooperating teachers are welcomed to join the sessions via video conferencing facilities or on site where the facilities permit.

Knowing the cooperating teachers and prospective teachers have integrated educational technology into field experiences, faculty members who teach educational technology courses in Teacher Education Program will incorporate the field experience sessions into the courses using video conferencing facilities. With permission from the administrators and cooperating teachers, the field experiences sessions can also be videotaped and later shown as examples for prospective teachers. The prospective teachers who have not engaged in field experiences will have the opportunity to see what is done in the classroom context. This can provide an authentic, real world, and motivating experience for the prospective teachers to learn how to use and to integrate educational technology in the classroom settings.

Surveys will be conducted to examine the effectiveness of each training session and consultation process. The training sessions for university faculty members can be videotaped for review by participating faculty members and for evaluation purposes. All participating classroom teachers, prospective teachers, and faculty members will be requested to provide reflection papers on their progress in integrating educational technology with provided guidelines throughout the year. Prospective teachers will continue to apply what they have learned and observed from field experience to their student teaching. They can even apply the consultation skills observed from the trainers to consult with their colleagues in the future. In addition to the reflection papers, participating classroom teachers also have to provide records on the noticeable change in students' performance and motivation for learning or any noticeable changes in other aspects of learning. Integration lessons and curriculum examples are collected. The collected examples will be put onto the consortium Web sites so that all the participants in this project can collaborate and share the information and integration ideas. These experiences will also be shared and demonstrated in the showcase conference.

Surveys will be conducted to evaluate specific aspects of the overall progress. The progress results will be tallied, documented, and analyzed by professional evaluation analysts.

**Stage III: Adaptation**

**Time Frame: Second Year (June, 1, 2002-May 31, 2003)**

As a result of training sessions during the first year, more participating university faculty members are better prepared to model the integration of educational technology in different subject matters. Some of the faculty members can also assume leadership roles to offer training for their colleagues.

In the participating schools districts, some of the participating classroom teachers start to serve as consultants to their peers. Under the supervision and with the consultation of their trainers, these cooperating teachers can even conduct in-service training to their peer teachers. This process is to make these cooperating teachers feel confident in integrating educational technology into the classrooms and make public schools a natural place for collaboration and professional development.

The gap between prospective teachers and classroom teachers starts to diminish at this stage. A collaborative relationship is fully developed between prospective teachers and classroom teachers. Prospective teachers who go on to student teaching become proficient peers with their cooperating teachers. In the mean time, a new group of prospective teachers will work with the trained cooperating teachers and will have better field experiences since the cooperative teachers demonstrate the effective integration of educational technology into the classrooms. The TCCSA and TRECA professionals and educational technology faculty members will continue to consult a new group of cooperating teachers with a new group of prospective teachers to integrate technology into field experiences. The faculty members who teach educational technology courses in the Teacher Educational Program can incorporate the field experience session via video conferencing with the prospective teachers who have not yet engaged in field experiences. The cooperating classroom teachers can also serve as guest speakers in the courses to demonstrate and to motivate prospective teachers even before the prospective teachers start their field experiences.

Although the provision of training is still needed, half of the responsibility of the trainers shifts to consultation and scaffolding rather than conducting training to participating university faculty members. Participating public schools become more self-sufficient and continue to grow in the degrees of educational technology integration. More and more teachers are able to contribute to the collective growth of their schools in the area of technology integration. Less external training and consultation resources are needed for participating public schools.

Additional training areas are explored for participating university faculty members during this stage. The professional trainers and educational technology faculty members will provide new training topics depending on the new developments in educational technology and how the needs evolve.

Showcase conferences will be held annually. The participating university faculty members, cooperating teachers, and prospective teachers will share their experiences and progress in the conference. Evaluations of training sessions are conducted whenever training is offered. Throughout the year, all participating classroom teachers, prospective teachers and faculty members will submit progress reports and reflection papers based on provided guidelines. Educational technology integration lessons and curriculum examples are collected and put onto the consortium Web site. Classroom teachers continue to document the changes in students' performance and motivation for learning. Surveys will be conducted to evaluate specific aspects of the overall progress of this stage. The progress results will be tallied, documented, and analyzed by professional evaluation analysts.

**Stage IV: Summative Evaluation and Diffusion**
**Time Frame: The third year (June, 1 2003-May 31, 2004)**

While more and more faculty members and classroom teachers are being trained and become trainers, and prospective teachers continue to develop collaborative relationships with classroom teachers, the last stage of this project focuses on evaluating the project and diffusing the successful experiences of this project. The collected progress reports and reflection papers, classroom teachers' documentation on students' performance and motivation to learn, the evaluation of training sessions, the overall effectiveness and progress during each stage, and grant resource utilization are all systematically reviewed and tallied. Reports will be generated to illustrate the effects of this project. The Educational technology faculty members will offer a capstone course that focuses on evaluating the effectiveness of educational technology integration and will invite graduate students in educational technology to develop capstone experiences for the evaluation phase of this project.

The results of the project will be first shared with all partners in this project. As a whole, the partners will evaluate the effectiveness and efficiency of the project, the long-term benefits, and the future dissemination goals.

The results of this project will also be shared in major teacher educator conferences or educational technology oriented conferences such as ATE (Association for Teacher Educators), AECT (Association for Educational Communication and Technology), and NECC (National Educational Computing Conference). With the documentary videotape and consortium Web sites produced in this project, this project can serve as a model to help

other universities and public schools systemically improve teacher preparation programs and produce more competent classroom teachers in the area of educational technology integration.

**Conclusion**

Enhancing the quality of teacher preparation programs in the area of educational technology integration is by no mean an easy task. It entails systemic approaches to adjust the conditions of all the stakeholders to make the effort fruitful. The design of this project is one of the many endeavors undertaken by many educators and practitioners. The author believes that with the continuous effort, we will see the difference in the quality of our future teachers who ensure our children to be well prepared for the 21st Century.

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